Plant Operations Support Program
Signed into law April 21, 1997

SHOP talk

Volume 1, No. 4 | Plant Operations Support Program | Spring 1997

Inside

Computerized Maintenance Management Systems

Video-conference explores hot-button topic

The first videoconference sponsored by the Plant Operations Support program kicked-off March 18 on the hot topic of computerized maintenance management systems (CMMS).

More than 160 facility professionals from 57 agencies, schools, colleges, ports and counties took part in the event at nine sites throughout the state. The consortium was promised during last fall's workshop program that videoconferencing would be used to reach more members, saving them time and dollars. Bob MacKenzie, manager of the Plant Operations Support program, served as conference moderator. Panelists included Bill Caver, president of Caver-Moorhead Systems, Dustin Caudell, marketing director for Data Stream, and Bob Green, assistant director of maintenance and facilities operations, Washington State Military Department.

MacKenzie pointed out to participants that almost every public maintenance facility, and 70 percent of private sector physical plants, use some sort of CMMS. Many facilities are attempting to implement their third or fourth system version. Other facility operators are not getting the full benefit from their current system. This lack of success in implementing a CMMS is not usually the fault of the product, he said.

"Lack of complete success is likely due to a poor definition of what a CMMS should do, or maybe a lack of understanding of the resources and investment necessary to make a CMMS work," MacKenzie said. "The problem could be a lack of understanding of how software systems are implemented and the changes in processes they require. Certainly, in most public agencies, we have the challenges of too few staff, too many facilities and too little time to do it all."

Panelists outline different approaches to CMMS

Bill Caver discussed his company's approach to CMMS. The FM-1 system is used in many state and community and technical college maintenance offices. Caver discussed how to answer two basic questions:

How do you make your automated system perform?
How do you get consistency on sites?

see CMMS, back page

The Plant Operations Support Consortium

Big Bend Community College
Clark College
Clark County
Lewis County
Lower Columbia Community College
Marysville School District
Mukilteo School District
Oak Harbor School District
Pierce County
Port of Anacortes
Port of Longview
Port of Sunnyside
Snohomish School District
Spokane Community College, Dist. 17
State of Alaska
Washington State Agencies:
- Corrections
- General Administration
- Labor and Industries
- Military Department
- Natural Resources
- Parks and Recreation Commission
- Social and Health Services
- State Patrol
- Transportation
- Veteran's Affairs

In cooperation with:

Association of Higher Education Facilities Officers (APPA)
Association of Washington Cities (AWC)
National Association of State Facilities Administrators (NASFA)
Operations and Facilities Council (OFC)
Washington State Association of Counties (WSAC)
Washington Association of Maintenance and Operations Administrators (WAMOA)
Washington Public Ports Association (WPPA)

Quarterly Update

A summary of Plant Operations Support program activities and issues

Program receives statutory authority; funding still a challenge

It's official: Your participation and support of the Plant Operations Support program has resulted in a legislative charter. The program had been encapsulated in House Bill 1066, State Facilities Maintenance. The bill was signed into law April 21, 1997 by Governor Gary Locke.

The bill adds a new section to chapter 43.82 RCW to read as follows: "The Department of General Administration shall provide information, technical assistance, and consultation on physical plant operation and maintenance issues to state and local governments through the operation of a plant operations and support program. The program shall be funded by voluntary subscription charges and service fees."

The lack of dedicated funding for the program "presents certain challenges," Marsha Tadano Long, director of the Department of General Administration, told a Senate committee. "But we are confident the program will be sustained by its members if we continue to provide responsive, effective support."

We are developing fee/subscription schedules for state agencies and others operating in biennial systems, and for municipalities, K-12 schools and others operating under annual systems.

"Our goal is to get 90 percent commitment by July 1997 so we can devote our energies to client servicing, rather than fund-raising," said Grant Fredricks, deputy director for General Administration.

Site visits

The past quarter was chock full of on-site visits. Here are a few of the sites visited and the facilities managers who ***make it happen.*** We salute them for their continued outstanding efforts at "Maintaining a State of Excellence."

Northern State Multi-Service Center, Sedro-Woolley
– Mel Walton

Kent School District, Kent
– Glen Anderson, President of WAMOA

Yakima Work Release, Yakima
– Ron Nichols and Superintendent Joop DeJung

WSDOT South Central Region, Yakima
– Bob Hicks

Yakima Valley Community College, Yakima
– Mike Weldon

Port of Sunnyside, Sunnyside
– Bob Farrell

Walla Walla Community College, Walla Walla
– Ed Solbach

State Penitentiary, Walla Walla
– Joe Waiblinger

Coyote Ridge Corrections Center, Connell
– Jim Loubach

Consolidated Support Services, Medical Lake
– Tom Bumgarner, Terry LaFrance, Jim Cleveland

Joint Center for Higher Education, Spokane
– Butch Slaughter

WSDOT, Eastern Region, Spokane
– John Molander

City of Tacoma
– Ray Corpuz

Cedar Creek Correctional Center, Littlerock
– Leroy Wallace

Lewis County Courthouse/Facilities, Chehalis
– Chet Higgins

Washington Corrections Center for Women, Purdy
– Stan Hulett

McNeil Island Corrections Center
– Norm Pacholke, Willie Dixon

Olympic Corrections Center, Forks
– Jerry Sullivan

Washington Corrections Center
– Charlie Hicks, Sr.

Oak Harbor School District
– Gary Hansen

Snohomish School District
– Jim Price

Mukilteo School District
– Dan Foster

Marysville School District
– John Bingham, Brian Reese

Echo Glen, DSHS
– Bob Sanchez

Granite Falls School District
– Superintendent Gary Wall

Conference participation

Washington Association of School Administrators (WASA) Facilities Conference, Tumwater

Washington Quality Awards, Tacoma

Building Operator Certification, Bremerton

WASA Small Schools Conference, Yakima

FM Software Symposium, Seattle

Council of Educational Facilities Planners Intl., Ellensburg

Shop Talk is a quarterly publication of the Plant Operations Support program. The newsletter is intended to be an informative and operationally-oriented medium for public facilities managers. Contents herein are also available on the program's web site at **www.ga.wa.gov/plants/plantops.htm**

We welcome feedback on the newsletter's contents and input from readers. We reserve the right to edit correspondence to conform to space limitations. Bob MacKenzie, program manager and editor, (360) 902-7257 or e-mail bmacken@ga.wa.gov

Department of General Administration, P.O. Box 41012, Olympia, WA 98504-1012. Marsha Tadano Long, Director

Plant Operations Support Web Site Has Moved!

Visit us at our new location:
www.ga.wa.gov/plant/plantops.htm

Welcome New Members!

Port of Sunnyside
Port of Anacortes
Port of Longview
Clark County Facilities Division

Our warm welcome to their staffs. We look forward to serving their facility and operations needs.

Shedding Light on a Waste Management Nightmare

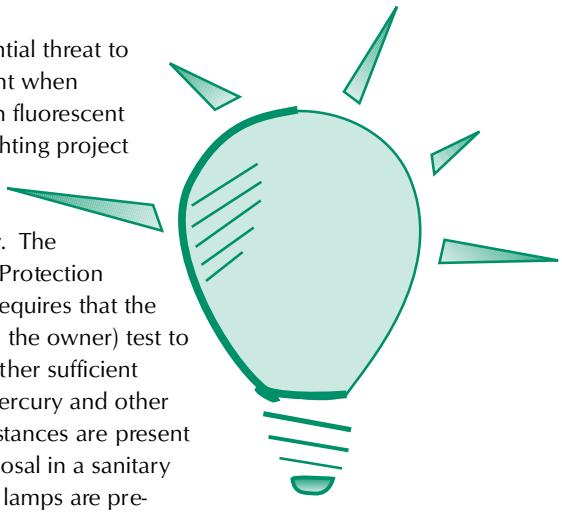
Wake-up and recycle lamps and ballasts

Recycling is not only the right thing to do, it also eliminates nearly all liability for disposal. Recycling is the preferred method of disposal for lighting projects. Building owners should be concerned about future Superfund clean-up liability when potentially hazardous materials are placed in landfills. Anyone disposing of more than one pound (25 ballasts) of PCBs or mercury in any landfill is a Potentially Liable Party in any subsequent Superfund cleanup of the landfill.

Why are lamps and ballasts potentially hazardous?

Older fluorescent lamp ballasts contain PCBs (polychlorinated biphenyls), a probable human carcinogen, and must be managed to reduce risks to human health and the environment. The manufacture of PCBs was halted in the United States in 1977. The primary substitute for PCBs for small capacitors in fluorescent lighting ballasts is DEHP (di-ethylhexl phthalate). Federal law requires that DEHP ballasts be managed in the same way as PCB-containing ballasts. Superfund liability exists for anyone placing DEHP ballasts in landfills. Non-PCB ballasts may contain DEHP and should be tested to determine the proper method of disposal.

Fluorescent, metal halide, mercury vapor, low- and high-pressure sodium all present an environmental risk due to the elements present in the lamps. Mercury, lead, cadmium, phosphorous and antimony are contained in these lamps and present a potential threat to the environment when landfilled. Each fluorescent lamp from a lighting project contains approximately 45 mg. of mercury. The Environmental Protection Agency (EPA) requires that the generator (you, the owner) test to determine whether sufficient quantities of mercury and other hazardous substances are present to prohibit disposal in a sanitary landfill. Broken lamps are presumed to fail the Toxicity Characteristic Rule for mercury. Therefore, unless the generator is able to prove otherwise through testing, the lamps must be managed as a hazardous waste. Recycling broken lamps is considerably more costly than recycling whole lamps.



If you're wondering what laws regulate the disposal of lamps & ballasts, here's the lowdown

Both the State Department of Ecology and the EPA have jurisdiction over disposal of potentially hazardous materials. The three primary federal laws are the: Toxic Substances Control Act bans the manufacture and distribution of PCBs and regulates their disposal and storage; Comprehensive Environmental Response, Compensation, and Liability Act provides extensive liability for improper hazardous waste disposal practices. Resource Conservation and Recovery Act regulates lead, mercury and other hazardous wastes. Other federal laws affecting ballast disposal are the Department of Transportation regulations and the Occupational Safety and Health Administration (OSHA) regulations.

How can lamps & ballasts be recycled?

Public agencies can use the state contract with *Rollins Environmental Services* for recycling lamps and ballasts. PCB and DEHP ballasts are dismantled, metals recovered and the PCB and DEHP products are incinerated. Public agencies have also utilized the services of *Salesco Systems* and *Full Circle, Inc.* All three firms have passed EPA inspections and use incineration as the method of permanent destruction. Using vendors other than those mentioned above should be done only after a thorough investigation of their operations, licenses and compliance history.

The bottom line? Recycle!

The best disposal method for spent lamps and ballasts is recycling of the non-contaminated components and incineration of the potentially hazardous components. Incineration results in permanent destruction and no future liability for the generator.

Need more information on lamp & ballast disposal?

Electric Ideas Clearinghouse, Olympia, Rob Penney, 1-800-872-3568

EPA Region 10, Compliance, (206) 442-1200

EPA Region 10, Green Lights Program, Seattle, (206) 775-6650

Department of Ecology, Olympia, Hazardous Waste Program, (206) 459-6316

Partial List of Recyclers – Contact Clearinghouse for Additional Firms

Rollins Environmental Services, Michael King, 1-800-548-7087

Salesco Systems, Margo Brower, 1-800-368-9095

Full Circle, Inc., Steve Nemer, 1-800-775-1516

Environmental Energy Group, (817) 383-3632

Mercury Recovery Systems, (818) 301-1372

For further information, contact Clint Loughheed (360) 902-7262, or Paul Fiedler (360) 902-7261

Building Commissioning

Avoid building operation headaches

Have you have ever taken possession of a building and not known how to operate the various systems? Have you found yourself surrounded by sophisticated equipment with insufficient reference manuals? If so, building commissioning may be the answer.

Likewise, if you lack proper training on the new facility's equipment, building commissioning could be the solution, says Ray Anderson, Facilities Engineering Group at the Department of General Administration. They say building commissioning could be the key to optimizing your building systems and avoiding costly retrofits and repairs. Here's what the facility professionals have to say about building commissioning.

Building commissioning is often thought to occur near the end of construction. However, building commissioning is actually a process that begins as part of predesign and is an integral part of design, construction, acceptance, occupancy, and building operation.

Commissioning ensures that new buildings or remodels perform according to design intent and the owner's operational requirements. With the advancement of technology, building systems have become more complex and the need for commissioning has become increasingly important. Buildings are often turned over to an owner and operating staff with many unresolved operational problems. These problems cause disruptions during the initial occupancy period for the tenants and operating staff, resulting in contractor callbacks or long-term operating problems.

The goal of building commissioning is to deliver a fully-operable building to facility operators who have received proper training and have the necessary repair components and materials. To reach this goal, it is important to document and verify the performance of all building systems. Communication between all participants, building designers, owners, operators, and the commissioning agent, is an absolute key to a successful commissioning process.

The building commissioning process works best when the commissioning agent is an independent consultant working directly for the building owner. This allows the commissioning agent to become an equal partner on the design team. Building commissioning provides documentation for systems such as heating, ventilating, air conditioning, controls, and other major building systems. It emphasizes comprehensive training and education for building operators and facility managers on system start-up and equipment operation.

Commissioning involves the operations and maintenance staff in all phases of building design and construction. Issues of equipment selection, access, frequency of repair, efficiency and serviceability of the equipment are considered in the predesign and design phases. During the acceptance phase the commissioning agent works with all parties to ensure a smooth transfer of the project from the design/construction team to the owner and operations team.

The building commissioning process benefits the owners, operators and occupants. A well-managed commissioning process normally provides for fewer change orders, reduced construction costs, reduced operating costs, and fewer construction delays.

The benefits for building operators are systems that operate properly with fewer occupant complaints, training on all building systems, and the provision of proper operating and maintenance reference manuals for building equipment. The benefits for occupants are healthier working environments in better-maintained and safer buildings.

Building commissioning is a cost-effective way to reach the top rung on a ladder to a smooth-running building. You can significantly reduce your building operation headaches and gain long-term cost benefits.

For more information call Ray Anderson (360) 902-7260 or Roger Wigfield (360) 902-7198.

Building operator certification series takes shape

The Northwest Energy Efficiency Council (NEEC) is offering a Building Operator Certification training series in Kitsap County this spring. The training series will prepare building operations and maintenance staff for certification in energy and resource-efficient building systems. Staff who successfully complete the training series will be eligible for certification as a Certified Building Operator (CBO) by NEEC.

Who should attend

BOC training is designed for operations and maintenance staff in public and private sector buildings. Past participants have included the Boeing Company, the U.S. Navy, school districts, state institutions, and hospitals. CBOs have demonstrated competence in building equipment and controls layout, equipment energy consumption, HVAC energy inspection reporting, lighting surveys, indoor air pollutant sources and pathway locations, and facility electrical distribution.

Training and certification fee

The fee for the training and certification series is $550 per participant. It includes seven courses (equivalent to 56 hours of training), course handbooks, 12 hours of facility project assignments, and the application for certification. Similar industry training courses often charge two or three-times the course fee. Participants who qualify for certification will receive a CBO certificate, listing in NEEC's Directory of Certified Building Operators, recognition letters to their employer, and an invitation to a CBO awards ceremony. Continuing education hours are also available.

For more information about building operator certification or NEEC, contact Cynthia Putnam by e-mail **cmputnam@aol.com** or voice **(206)726-9397**

Booming region creates windfall for state construction

Pacific Northwest Economic Region pilot project reducing barriers to trade in government construction

By Inga Holmquist, Deputy Director, PNWER

The Pacific Northwest Economic Region (PNWER) is proposing a pilot project through its Government Procurement Working Group that could put our region at the forefront of trade barrier reduction. In this pilot project, dubbed *Operation Upstart*, each participating state and province within PNWER will designate two to five government construction projects on which to allow open bidding. It's been described as a mini "free-trade zone" in government construction.

Taxpayers benefit because the state can choose the best qualified bidder at the most competitive price. Finally, private sector companies that want to grow will benefit from the opportunity to bid on projects outside their home jurisdiction.

PNWER encourages innovations in the reduction of trade barriers as part of its mandate and mission. PNWER is a public/private partnership, created by statute, composed of the states of Alaska, Washington, Oregon, Idaho and Montana, and the Canadian provinces of Alberta and British Columbia. PNWER was created in 1991 by uniform legislation passed in each of its member jurisdictions. Its goal is for the Northwest to become a major player in the global economy by combining the region's strengths and resources through regional economic cooperation. In doing so, PNWER becomes the 10th largest economy in the world.

By statute, all state and provincial legislators in the region are members of PNWER, as are the governors and premiers. In addition, private sector members, counties, economic development commissions, industry associations and similar entities have joined as dues-paying members of PNWER. The general membership of PNWER meets twice a year. Its nine working groups convene at these meetings to share ideas and resources and to establish their workplans.

The Summer '97 PNWER Meeting will be at the SeaTac Marriott, June 14 –16. If you would like more information on PNWER or would be interested in attending the PNWER Summer Meeting, please contact:

Inga Holmquist
tel (206) 389-2827,
fax (206) 389-2811,
email: inga@pnwer.org

999 3rd Ave.
Suite 1060
Seattle, WA 98104

Visit the group's Web site at www.pnwer.org.

Operation Upstart will benefit state government by allowing a broader selection of qualified bidders.

FORUM '97

Industry workshops and trade show offered to Plant Operations Support members

Public plant and facility managers are invited to the 5th annual ***FORUM '97*** — an educational program and trade show — taking place Thursday, May 15th at the Washington State Convention and Trade Center. The Forum event occurs once a year, and is sponsored by the seven major local associations serving the Northwest's commercial property management, sales, leasing and facility management industry. The all-day program boasts 30 workshops oriented toward critical facilities venues. The red-starred workshops noted in the ***Forum*** flyer are free to Plant Operations Support members.

The ***Forum*** trade show includes more than 100 vendors offering products and services representing many aspects of building/facility management. The sponsoring trade associations are: BOMA, IFMA, IREM, NAIOP, WAR, CMLA and WSCAR. See the enclosed flyer for more information or call Diamond Productions, (206) 454-5890.

How and why to paint your concrete slab

Guest article by Paul Oman, Progressive Products, Inc.

Concrete slab floors are found in nearly all public facility sites. Should you paint, coat, or leave them alone?

Reasons to coat your floor

Concrete floors are coated for several reasons: 1) to improve chemical resistance, 2) to prevent the concrete from sweating (epoxies are used for this application, 3) to impart a non-skid surface, 4) to seal the surface from moisture and/or reduce dust, and 5) for appearance's sake.

Possible problems

In some cases, getting a suitable, long term bond between the concrete and the coating can become a career or profit-destroying task. So, coat your slab only if there is a true need and only if you are willing to perform suitable surface preparation. The preparation, as in many maintenance tasks, is crucial to the overall success of the job.

It is often a challenge predicting why and where an application will fail. Results of failed applications include blistering and peeling. Reasons can include: 1) a layer of dust or dirt on the surface, 2) too smooth, oily or waxy a surface from previous coatings or contaminants, 3) a damp surface, 4) surface salts or ions that are already present or forming/collecting (can be from surface waters, contaminants or from the concrete itself), 5) vapor pressure and/or water flow within the porous concrete itself before, during, or after the coating has been applied, or 6) a weak surface layer of concrete (from either very old or very new concrete). Other problems may include existing "active" cracks and/or expansion joints. If you simply paint over them the coating will crack or peel when movement or shifting takes place.

Surface preparation

Surface preparation is often a judgment call based upon the location, condition and history of the existing concrete. Your best chance at a successful floor coating job in most public facility arenas is to shot-blast the floor, remove the top layer and provide a new, fresh surface profile. Then waterblast the surface and include a salt-removing agent. Finally, wet-vac the surface dry, removing water, dust, and dissolved salts.

Modern floor coatings

Progressive Products Inc. sells a line of solvent-free epoxies for floor coating. Solvent-free epoxies have no strong fumes to worry about and their wet thickness equals their dry thickness. In other words, if you apply 20 mils of coating or fill in a tiny void with the wet epoxy, it will harden at 20 mils instead of shrinking and re-exposing any filled-in cracks or voids. Solvent-free also does nothing to soften or weaken existing coatings or finishes, such as the adhesive under floor tiles that are being encased or sealed in epoxy. These epoxies can also be applied to wet or damp (or even submerged) floors. Remember that moisture is one possible cause for failure of floor coatings.

For more information on solvent-free epoxy coatings and other applications, contact Paul Oman, via e-mail at p.oman@ix.netcom.com, or by calling Progressive Products, Inc. (PPI) 281-997-9872 fax 281-997-9895 4607 Linden Place. Pearland, TX 77584. Visit the company's web site at: http://www.tenagra.com/progress/

Reducing Chemical Usage in Pest Programs

Guest article by Ben Danielson, Redi National Pest Eliminators

Do you believe that chemical applications are the key to controlling pest infestations? If your answer is "yes," then you are probably not aware of the many new breakthroughs in innovative pest-management techniques which can reduce and even eliminate pesticide applications in most facilities.

The pest management industry is concerned with the extensive chemical applications which have been the mainstay of traditional programs since World War II. For example, coordinating the use of pheromone traps and sanitation reports and better managing stored pest-management products in facilities can often greatly reduce the need for pesticide applications. Flea monitoring devices, habitat control, and the use of hormonal mimics (which inhibit development of insect larvae) called "insect growth regulators" (IGRs) can eliminate the need for pesticide applications in most facilities.

Cockroach control is possible using aggregate pheromone monitors, low toxicity baits, and specific IGR applications. Pesticide applications can be reduced to limited amounts in only specific areas. The list is lengthy of options for control of many pests. If readers want to reduce the use of pesticides in their pest-management programs, they should contact their service providers to discuss options, or call us at 1-800-401-9935; e-mail **redi2@ix.netcom.com**

Professional Development Opportunities

Resources designed to save you time and dollars

Plant Operations Network "List-Server" Now Available

Electronic forum provides arena for questions, answers, issues and more

Imagine having the collective knowledge of all Plant Operations Support consortium members available to you at any time. With the **Plant Operations Network**, through the Internet's e-mail capabilities, you might do just that. Here is what a list-server is and how you can freely take advantage of the Plant Operations Network.

A list-server maintains an e-mail distribution list and handles the job of sending copies of Internet e-mail to all those members who have subscribed. Subscribing is as simple as sending your Internet e-mail address.

Steve Bode is a building manager with the Division of Facilities Management for the State of Missouri. He has witnessed the benefits of list-servers and believes they save labor and dollars.

"I sent a message to a state facilities-administered list-server about a problem with a unique style of roof," he said. "Within days I received phone calls and e-mail messages containing expert comments on the situation."

To subscribe by e-mail

To subscribe, send an e-mail to **<majordomo @www.wa.gov>** with nothing in the subject block and only <subscribe operations> in the message body. To remove your name from the list send to <majordomo@www.wa.gov> with nothing in the subject block and only <unsubscribe operations> in the message body. Join us for spirited discussions and up- to-date information on the **Plant Operations Network**.

To subscribe by the web

Visit the Plant Operations web site: www.ga.wa.gov/plant/operlist.htm

Follow the instructions to subscribe. If you have questions please call (360) 902-7257.

Two Free Workshops in May Provide Facility Professionals "Top-Flight" Info

Two free workshops will take place at the Worthington Conference Center on the Saint Martins College campus. The college is located at 5300 Pacific Avenue in Lacey, Washington.

"Managing Your 1997-99 Capital Program," presented by Engineering and Architectural Services

Workshop topics include alternative contracting methods, consultant selection, effective project management, performance contracting, plant operations support interface, a report from OFM and more.

Tuesday, May 27
8 a.m. Registration
8:30 a.m to 5:00 p.m.
Contact Jo Ann Cabiao
(360) 902-7231.

"Universal Design: Making Facilities Accessible for Everyone" sponsored by the Departments of General Administration and Personnel.

This seminar focuses on universal design principles and improving program access for persons with disabilities.

Wednesday, May 28
8:30 a.m to 4:30 p.m.
Course number: 01-14-EPA7. Contact your agency training manager, or call (360) 586-1343 or (360) 753-4107

Recommended Reading

IFMA Research Report #16, Facility Management Practices – A wide array of industries, sizes and facility-use groups are represented by the International Facilities Management Association members surveyed during the latter part of 1995. Check out the relevant data by contacting your local IFMA chapter, or writing IFMA at 1 East Greenway Plaza, Suite 1100, Houston, Texas 77046-0194 This is a report worth the time!

Plant Operations Prototypes

Duct cleaning (POSP 0024)– The Plant Operations Support program staff have researched the topic of duct cleaning on behalf of program clients and contacted industry, state and national sources for comparisons. These data can save you thousands...check out this prototype!

Blood Borne Pathogen Operating Procedures (POSP 0025) – An excellent collection of well-written procedures from Department of General Administration, University of Washington, Goshen College, and Spokane Community Colleges.

Contract Selection and Capital Renewal (PSOP 0026) – Results of nationwide comparisons and research in two critical areas of facilities management.

Spill Protection Control and Countermeasure Plan; Above and Below-Ground Storage Tanks (0027) – A collection of EPA and Ecology regulations, guidance and policies concerning SPCC and AGT/BGT.

Recycled Material Manufacturers Listing and Compendium (POSP 0028) – A useful collection of recycled-related data.

Ground Water Safety, Nitrates and other substances (POSP 0029) – Informative data from EPA, Ecology and other sources on drinking water, groundwater management and nitrate issues.

Indoor Air Quality (POSP 0030) – A compendium of IAQ materials, including EPA, state and local policies, programs and industry-source recommendations.

Facility Use Agreement (POSP 0031) – An excellent resource guide courtesy of Pacific Northwest Laboratories.

Building Operator Certification (POSP 0032) – A comprehensive operator course and schedule, provided by the Northwest Energy Efficiency Council (NEEC).

Sample Contracts and Requests for Proposals (POSP 0033) – A collection of model contracts provided by the experts at the Office of State Procurement. Currently includes janitorial, maintenance, elevator and others.

CMMS

continued from front page

Caver outlined a four-step process:

The first step is to achieve consistency of data, and convert to the minimum level "lowest common denominator," he said. "Base the system on a low level of clerical skills required, even while completing complicated reports to please the auditors and capture all of the information."

Caver recommended using identity bar codes for simplifying surveys. He advocates an attention to detail that creates a system which captures site, buildings, floors, even individual pieces of equipment. Caver's second step is to memorialize the data. He recommends taking specific steps to build codes, but advocates making the codes easy to use. The third step in the Caver process is to combine the maximum amount of information.

"Connect drawings, hazards, specifications, operating manuals, positions, tools required, etc.," he said. "These become the background material. Parts and tools are related; leave room in your data arrangement for growth."

The fourth step is to get the data back out of the system, Caver emphasized. "Create the reporting mechanisms you will use." Caver closed his presentation with an offer to provide a guidebook, *How to Get Control of Maintenance*, to any requester.

Dustin Caudell, Data Stream marketing director, discussed creating realistic expectations for a maintenance management system. He outlined a 10-step process to achieve up to a 30 percent savings in an organization's maintenance and operations budget.

Bob Green manages five maintenance areas in the state, including over 300 buildings totaling in excess of 2 million square feet. For the past 10 years, Green has used the Chief systems (now called Maximo), and tied the system into the Delta energy management system (a utility manager), an intrusion detection system, and a closed circuit TV security system. He said the department would "do more with the system if budget constraints were lifted."

"A CMMS gives you a full inventory," Green said. "Additionally, you get the daily status of what needs to be done and you can adjust your priorities."

CMMS allows the user to develop a work history for budgeting and "arguing for funding. The system allows you to control and support each facility."

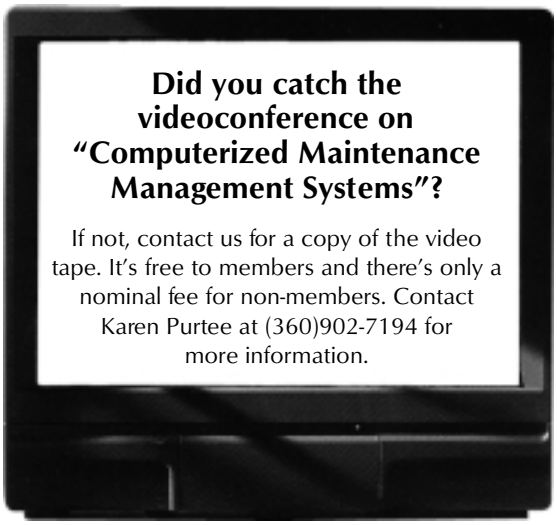
"Your workers have full control of the situation by knowing everything there is to know connected with the area or item they are dealing with, " said Green.

Preventative maintenance (PM) is the heart of Green's program. Work orders are issued in two-week cycles and teams sent out to sites. The system allows the PM to be focused toward specific areas: electrical, mechanical, etc. The work is identified and adjustments can be made to fit the work force and the budget. Additionally, there is a built-in warning system to notify when items are under warranty – saving dollars when a company should be doing the repair.

"There are *tack-on capabilities*, so that locations, CAD drawings, applicable standing operating procedures and safety-related items can be provided to the tradesperson at the same time," Green said. "Additionally, required replacement parts are listed for purchase, and tool requirements are specified."

The CMMS provides a total inventory for items large and small, said Green. Every mechanical item can be specified. Finally, a history is provided. All costs are captured. "The system can satisfy auditors and budget analysts with a solid audit trail," Green said.

For more information on computerized maintenance management systems, or to request a copy of the videoconference, contact Bob MacKenzie, (360) 902-7257. All panelists volunteered to answer follow-on questions and to help in other ways. They can be reached though the Plant Operations Support program, e-mail bmacken@ga.wa.gov



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Olympia, WA 98504-1012